FY 2013 Round 3 GRANT AWARDEES

Institution	Licensee / University	Cluster	Application Title	DESCRIPTION OF TECHNOLOGY
U of U	Licensee	LS	EEG Patch (Epitel)	A small, wireless device for human EEG monitoring is currently lacking. We propose an individual-use patch-type device for simplified EEG recording from human patients. This device will enable user-friendly application and real-time recording of the EEG signal either in the ICU, in an out-of-hospital setting (e.g., the home or work environment), or for research (e.g., antiepileptic drug testing). The device will consist of a small EEG electrode/transmitter unit that both wirelessly transmits EEG signals to a receiver and "logs" EEG data for later retrieval. Our primary objective is to create an unobtrusive device that can be used to reliably record wireless EEG under conditions where traditional EEG is not feasible or practical.
WSU	Licensee	MMEE	ENVE	ENVE Composites and UCAID will work in partnership to create state-of-the-art test fixture to conduct fatigue testing and data acquisition on components. The fixture will test products according to international EN standards and beyond. Unique differentiators include: Flexible to test 4 different product types (seat posts, forks, stems & handlebars): current testing requires 4 different fixtures at 2 different out of state labs. Test 3 samples concurrently: current test fixtures test 1-2 products at a time and takes 48 hours. Concurrent test is completed in 16 hours, and possibly 8 hours. [although please note that outside labs have taken as long as 3 months to perform test] Test to 3x industry standard load: Outside labs are limited to 1.5 loads. Capture relevant product performance and failure data: Currently not able to witness test and only receive a written report on pass/fail. This fixture will move test from attribute data to variables data. Test fixture has displacement and load fatigue data allowing ENVE to understand how parts are performing and includes mobile data acquisition to correlate lab results with real world use.
U of U	University	IT	Epinome	Epinome is a software suite developed to monitor disease outbreak information and provide users with the information they need to easily make decisions regarding policy and outbreak control. Dr. Livnat conducted in-depth study of data/user interaction to produce a best possible software and data visualization. This saves the users time and mental effort, as well as corrects for user error for optimal data use and decision making.
USU	Licensee	MMEE	FloMeter (Thermal Mngnt.)	The ClampOnFlowMeter (COFM) technology is a water flow meter that attaches to the outside surface of a metal pipe without cutting the pipe and may be installed by a typical homeowner. There is no residential or commercial clamp-on flow meter on the market. The technology uses low power input heaters and temperature sensors to measure water flow rate, total water flow, and detect leaks. Measurements may be instantaneously communicated to a homeowner or the municipality for water conservation and leak detection or alarms.

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U of U	University	MMEE	Graphene	Graphene is a new material made from 2-dimensional carbon. It has new and useful properties including excellent tensile strength and transparency to light. It is the best known conductor at room temperature, can be made into a semiconductor 1000x better than silicon, and is 40x stronger than steel. Its potential uses are extensive, including more efficient photodetectors, photovolteic cells, and eventually quantum computing. In order to incorporate it into microelectronics, its band gap must be broadened, which can accomplished by producing it in thin (
USU	Licensee	IT	ISQ	The Indicators of School Quality (ISQ) program was developed by USU's Center for the School of the Future and has been successfully used by over 430 schools to conduct over one million surveys of parents, teachers, administrators, and students and produce reports that guide school administrators on how to improve their schools. ISQ, Inc. will port the paper-based reporting to a scalable online real-time product, create an expert system for automated best practices solutions planning and execution, and set up a vendor marketplace to provide ready and available solutions to ISQ identified problems. There are currently no solutions with an expert engine or solutions marketplace.
BYU	Licensee	MMEE	Nanotube Filter	We use a process somewhat similar to the manufacturing of computer chips in order to create specialized filters that have exactly uniform and evenly spaced openings. These filters are useful because they clog less and have higher flow rates than normal and membrane filters. They are especially valuable for applications where there is a need to remove impurities above a certain size, but not have any product, which is below that size, trapped in the filter. We intend to market these filters to the pharmaceutical, biofuel, and processed food industries.
U of U	Licensee	LS	Novel Biosensor	This technology merges two highly established techniques (smart hydrogels and magnetic sensing) for the first time to create a novel microsensor that can continuously monitor almost any biomarker (e.g. glucose, pH, CO2, O2, trace metals, etc.) in liquid media. 'Smart hydrogels' are well known to reversibly swell in response to change in concentration of a selected biomarker in their environment. Smart hydrogels can be synthesized to respond to almost any biomarker (analyte) within almost any concentration range. Researchers have known for about a decade that smart-hydrogels are bound to revolutionize the sensing techniques and will (1) over come the limitations of current commercial continuous sensors in biomedical industry (e.g. Medtronic CGMS) (2) address the untouched market need in several industries such as bioprocess control, animal research, water quality management, etc. The biggest limitation has been in the methods to transduce the response of hydrogels into readable values. Groups around the world have used several transduction techniques like optical, pressure sensors, fluorescence, etc. without much success. We have successfully proven for the first time (and I.P. protected) that when smart hydrogels are embedded with magnetic nanoparticles, the response of the hydrogels can be accurately measured as a change in magnetic fields using low-cost ($1.50/unit), off-the-shelf magnetometers (e.g. Honeywell) creating a simple yet robust microsensor for continuous biomarker monitoring.

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BYU	Licensee	IT	Panx Solutions	The technology is a universal GPS that will not only enhance accuracy outdoors of traditional GPS, but it will uniquely work deep indoors and underground as well. This tech is one million times more accurate indoors than traditional GPS. Instead of satellites being used for the signal our technology uses free signals of opportunity to locate a person or items. These signals can be understood to be radio signals from radio towers. This technology is unique to anything on the market. The technology will be used in its early stages to assist existing devices with traditional GPS and also provide GPS to devices without GPS.
U of U	Licensee	MMEE	Qdots (Navillum)	Semiconductor nanocrystals such as quantum dots have relevant biological applications from medical diagnostics to cancer imaging. Quantum dots are nano-sized particles that can emit different wavelengths to track or destroy cancer cells. However, most quantum dots are not water soluble/aqueous, limiting its use for biological applications. With our recent success in large scale manufacturing of high quality non-water soluble quantum dots, we want to extend our expertise to manufacture water-soluble quantum dots.
UVU	University	MMEE (Energy)	RTMSR (Closed Loop)	The RTMSR is a Thorium reactor that produces high power output without the downside or radioactive byproducts of a Uranium reactor. It works by a blended mix of Thorium and flourides to produce an efficient source of power. This mixture operates without the water or pressures of the traditional Light Water Reactors so there is no danger of explosion or radioactive leakage. The RTMSR can us current spent fuel rod pellets as fuel, thus reducing a huge problem with current reactors. One ton of Thorium (a quite common element on earth) can produce as much power as 250 tons of enriched Uranium or 4 million tons of coal. The reactor is small enough to be portable which is a unique feature and can be used for electrical power or for heat to help in extraction of oil from Shale or Sands. Numerous safety features make this unique reactor the future source of green electrical power.
UVU	University	LS	SonoMargin	The Breast Cancer Research Laboratory (BCRL) at Utah Valley University (UVU) is seeking to significantly improve the quality of care for breast cancer patients by developing a surgical procedure for surgeons to look at the pathology of tissue while still in the operating room to ensure clean margins and reduce the number of repeat surgeries. The procedure is based on high-frequency ultrasonic technology that can recognize the difference between cancerous and non-cancerous tissue by how ultrasonic pulses are modified as they pass through the tissue.

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USU	University	IT	SwiftComp Micro (Analyswift)	SwiftComp Micromechanics, a dramatically different engineering software, accelerates time-to-market through an unprecedented combination of efficiency AND accuracy in improving structural designs, estimating a given structure or material's capabilities, or engineering a new material with desired properties. The first truly general-purpose micromechanics program, it is the world-class technology of its kind. SwiftComp handles both materials and structures with the accuracy of detailed finite element analysis (FEA), but in seconds, not hours. Users have analyzed composites; metal heat exchangers; ultralight, insulation, and construction materials; even biological tissue (bone). SwiftComp is the only tool that can handle very complex modeling.
U of U	Licensee	IT	TruClinic	The TruClinic™ portal enables healthcare providers to offer medical and behavioral health counseling sessions, health and wellness programs, disease management, follow up care, case management and other clinical services via a secure network. Practitioners benefit from a robust practice management solution that augments their on-site clinic. The portal includes a multi-tiered video communications platform, virtual reception area, appointment desk, personal health record, and a records management system. All this technology is consolidated in a proprietary, secure cloud based, user-friendly website accessible from any personal computing device.
U of U	Licensee	MMEE (Energy)	Water Sensor (E-Sens)	e-SENS has developed a direct reading, silicon-based chemical sensing technology to address the world's water monitoring needs. The company's lab-on-chip sensors monitor mulitple chemicals with an array of sensors selective to different analytes. The sensor array takes advantage of the mass fabrication manufacturing technology of the semiconductor industry to produce a low cost-per-test solution that is quantitative, accurate, and automatically records and transmits the data. Its use takes 1/10th the time of conventional methods, and avoids the use of reagents and the need for user-judgement in interpreting results. The sensor array chip will be replaced periodically, eliminating the need for constant maintenance of the sensors.
U of U	Licensee	IT	WIN	WIN is a peer-to-peer SaaS platform with a unique "no barriers" structure that allows users and resources to connect in a user-defined environment, either through member groups, by subscribing to specific labs, or by individual exploration of resources listed on the network. WIN is a closed network requiring a corporate or university membership for individuals to participate and paid subscription to offer resources for a fee. All network components, whether individuals, equipment, patents or tangible assets, are resources within the software structure, which allows users to create a unique structure of interaction. The company's greatest asset is the NSF research relationships and network of university collaborators.